

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,845,175 B2  
APPLICATION NO. : 09/830264  
DATED : January 18, 2005  
INVENTOR(S) : Avi Kopelman et al.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Delete the title page and substitute therefore the attached title page.

Delete Drawing Sheets 1-11 and substitute therefore the attached Drawing Sheets 1-9.

This certificate supersedes Certificate of Correction issued August 21, 2007.

Signed and Sealed this

Eighteenth Day of September, 2007

A handwritten signature in black ink, reading "Jon W. Dudas". The signature is stylized, with a large loop for the "J" and a cursive "Dudas".

JON W. DUDAS  
*Director of the United States Patent and Trademark Office*

(12) **United States Patent**  
Kopelman et al.

(10) Patent No.: **US 6,845,175 B2**  
(45) Date of Patent: **Jan. 18, 2005**

(54) **DENTAL IMAGE PROCESSING METHOD AND SYSTEM**

(75) Inventors: Avi Kopelman, Tel Aviv (IL); Eldad Taub, Reut (IL)

(73) Assignee: Cadent Ltd., Or Yehuda (IL)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 479 days.

(21) Appl. No.: 09/830,264

(22) Filed: Apr. 23, 2001

(65) Prior Publication Data

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#### Related U.S. Application Data

(63) Continuation of application No. PCT/IL99/00577, filed on Nov. 1, 1999.

(30) Foreign Application Priority Data

Nov. 1, 1998 (IL) ..... 126838

(51) Int. Cl.<sup>7</sup> ..... G06K 9/00

(52) U.S. Cl. .... 382/154; 382/294; 128/922

(58) Field of Search ..... 382/128, 131, 382/154, 285, 294; 600/587, 589, 590; 128/922; 433/24, 29, 68, 69, 215

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Primary Examiner—Todd E. Manahan

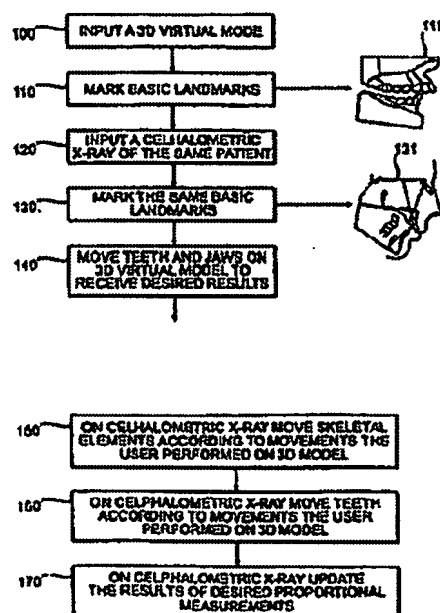
(74) Attorney, Agent, or Firm—Nath & Associates PLLC; Gary M. Nath; Lee C. Heiman

(57)

#### ABSTRACT

An image processing method for use in dentistry or orthodontic is provided. Two images of teeth, one being a two-dimensional image and one a three-dimensional image are combined in a manner to allow the use of information obtained from one to the other. In order to combine the two images a set of basic landmarks is defined in one, identified in the other and then the two images are registered.

23 Claims, 9 Drawing Sheets

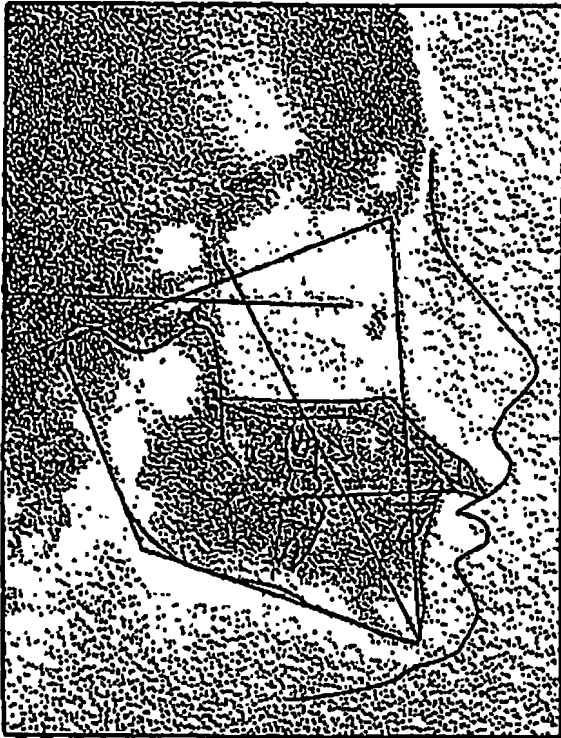


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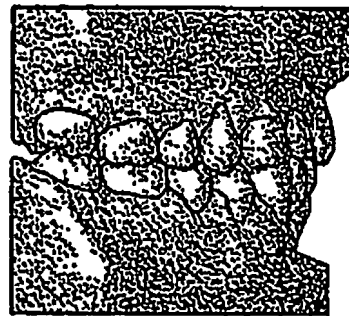
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**FIG. 1A**



**FIG. 1B**  
**PRIOR ART**

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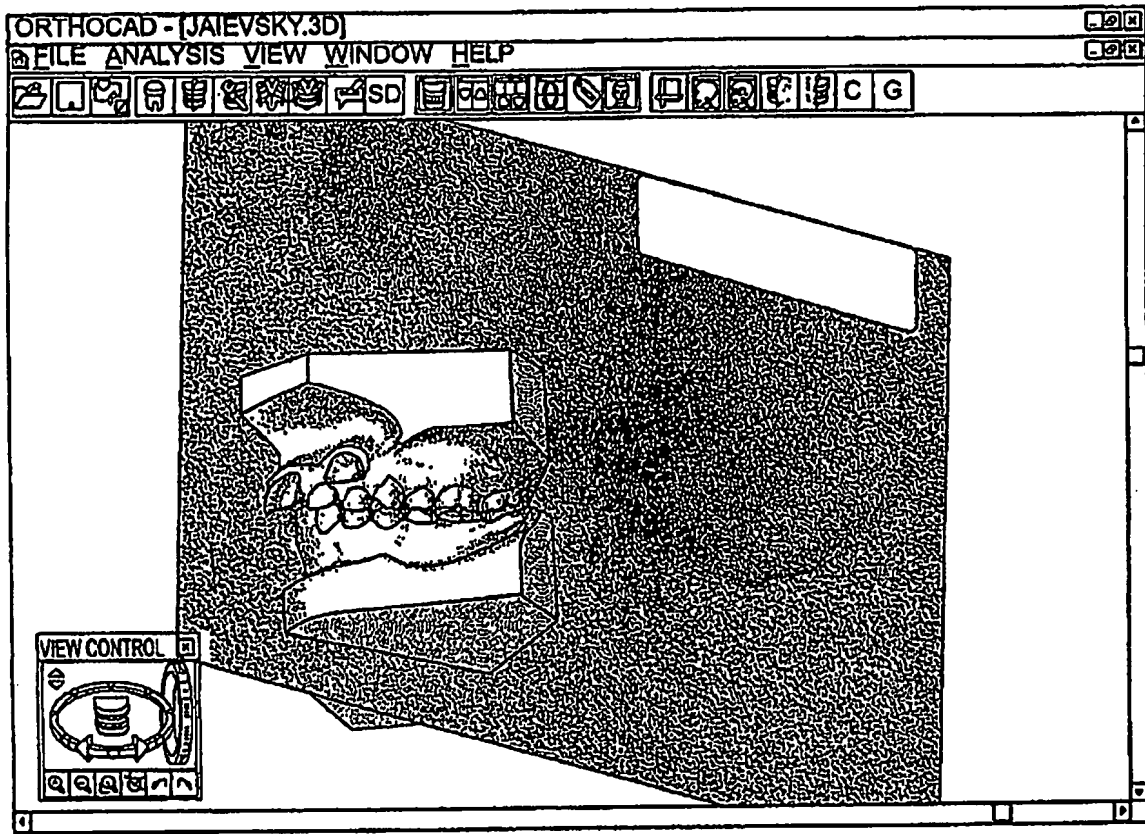
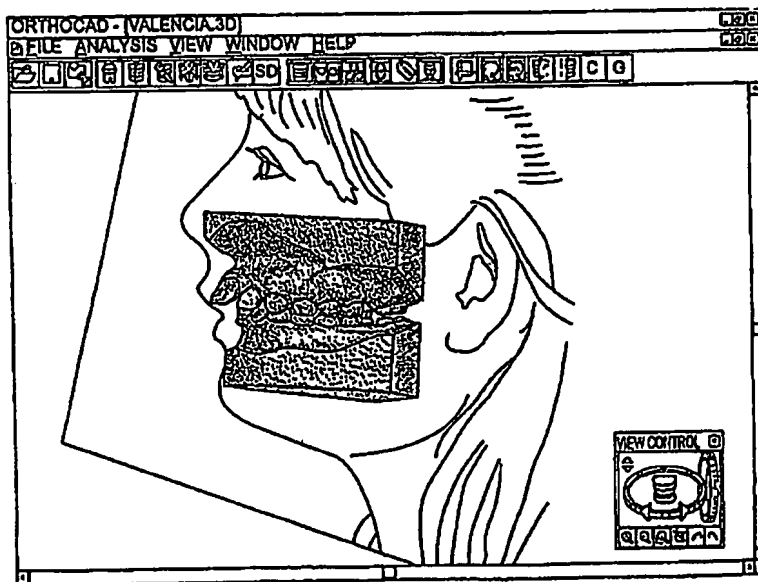
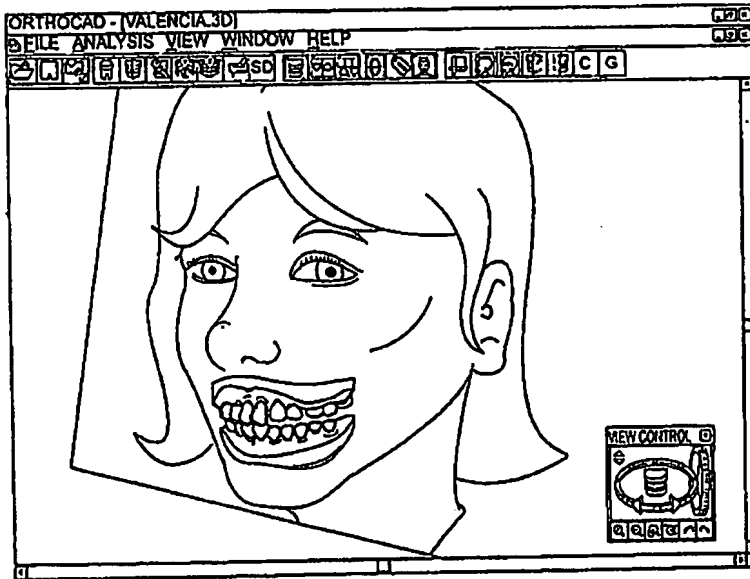


FIG. 2



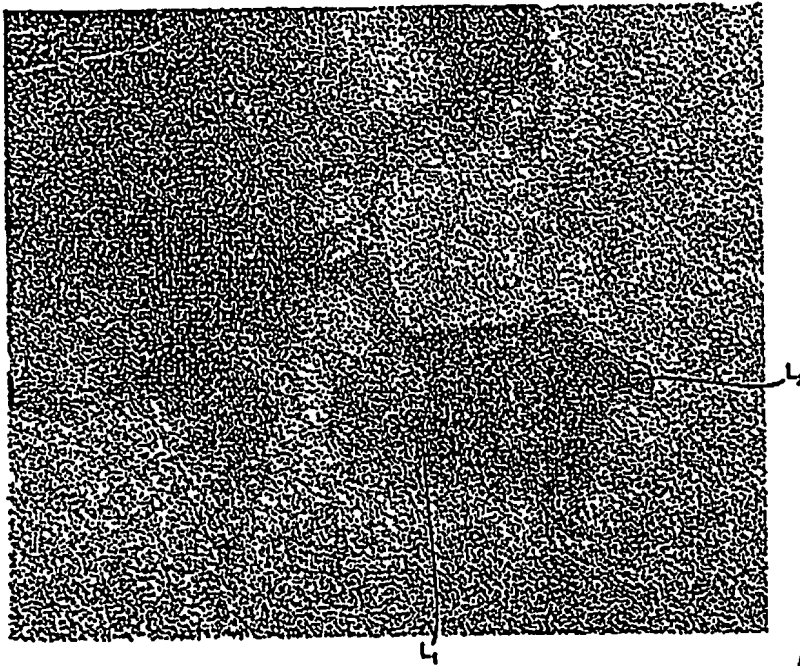


FIG. 4A

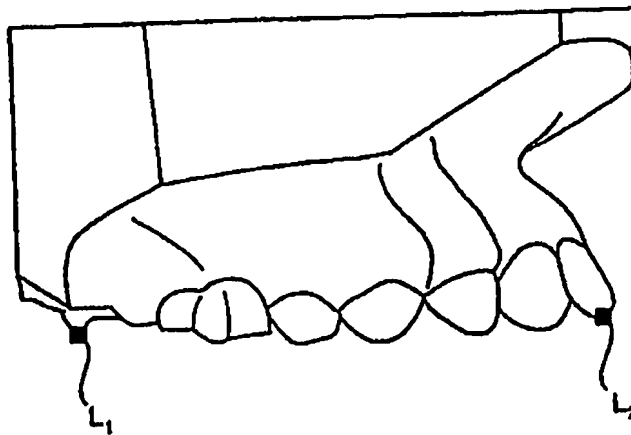
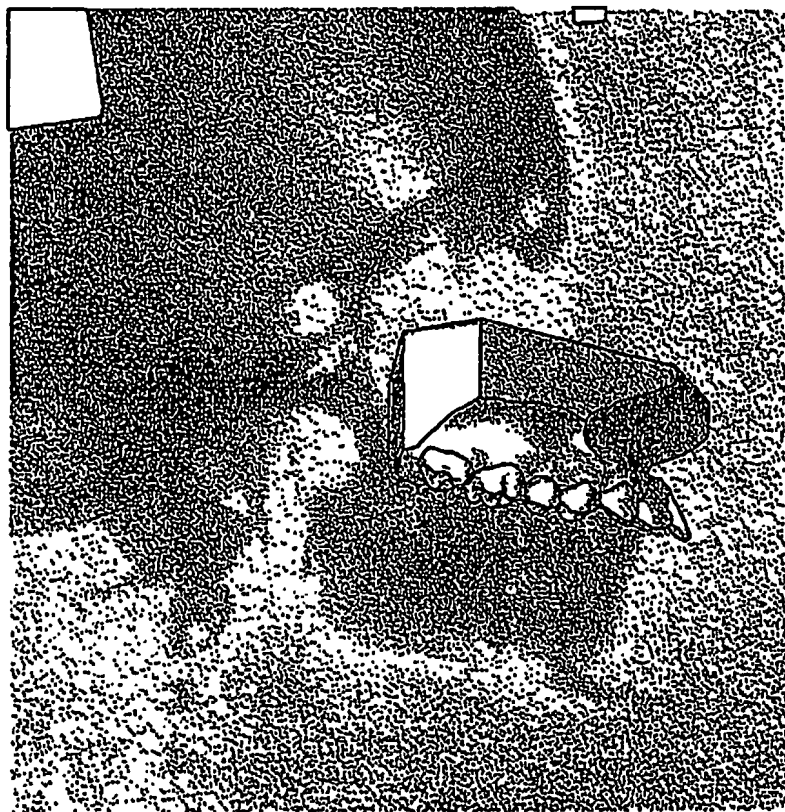


FIG. 4B



***FIG. 5***

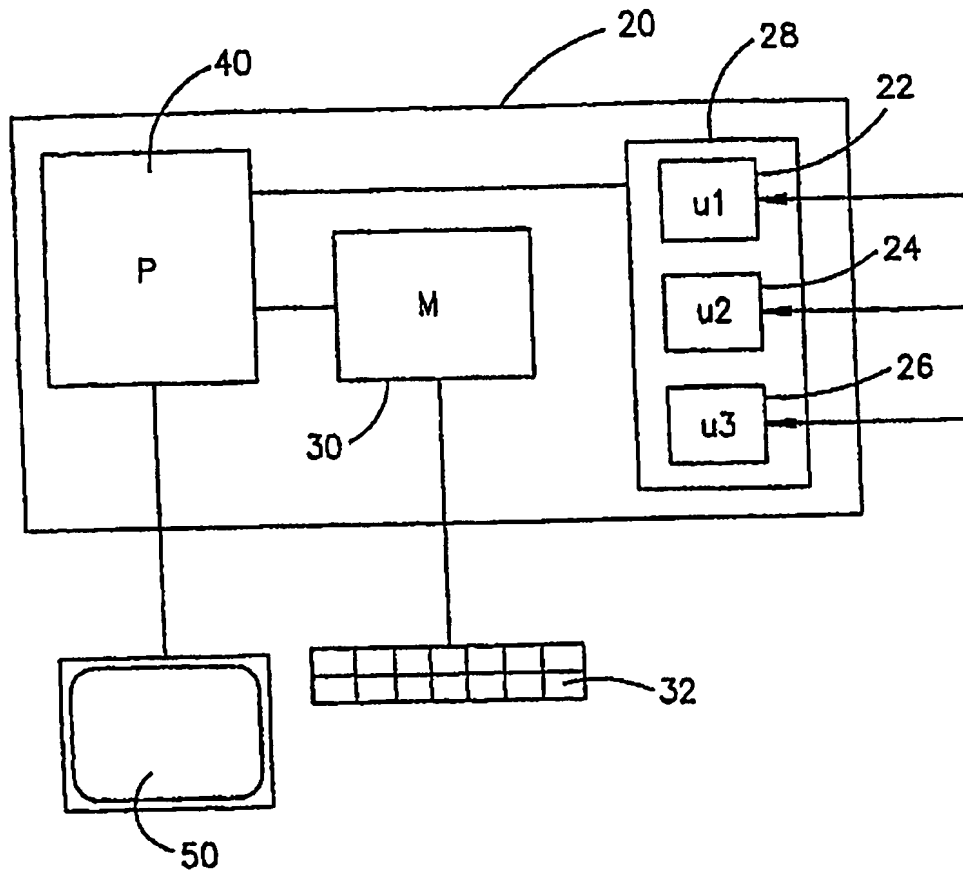
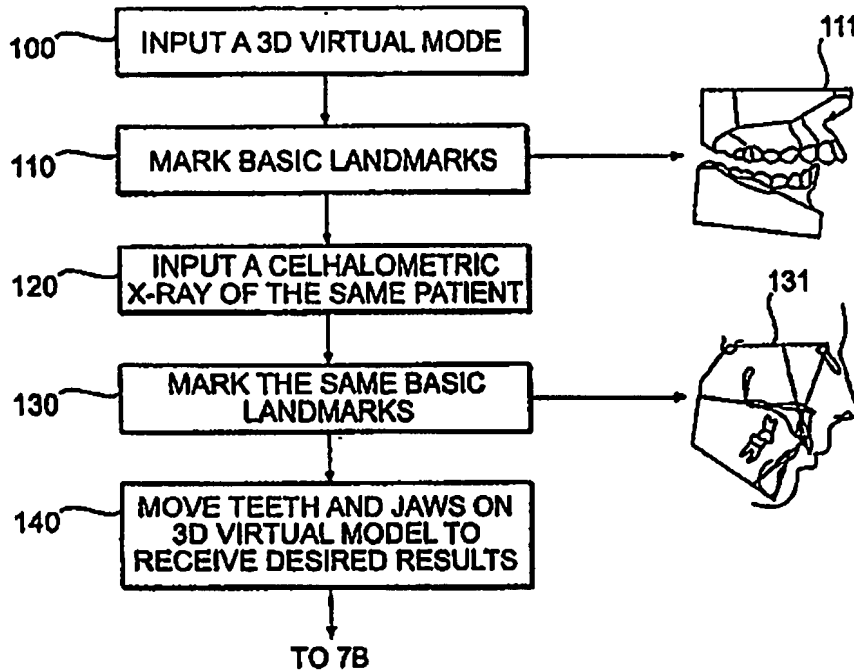
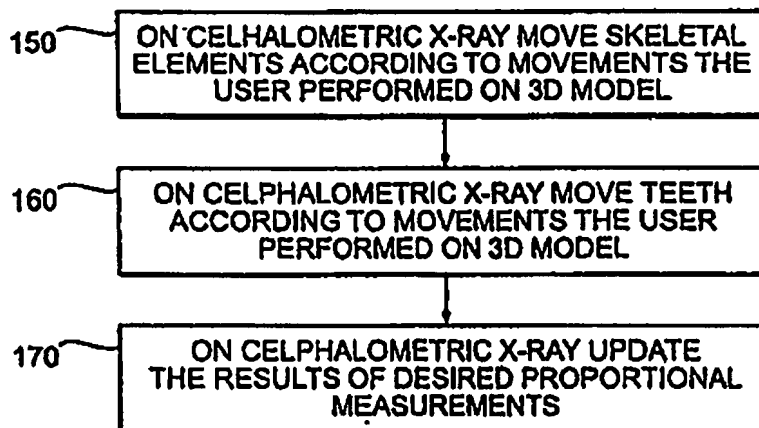
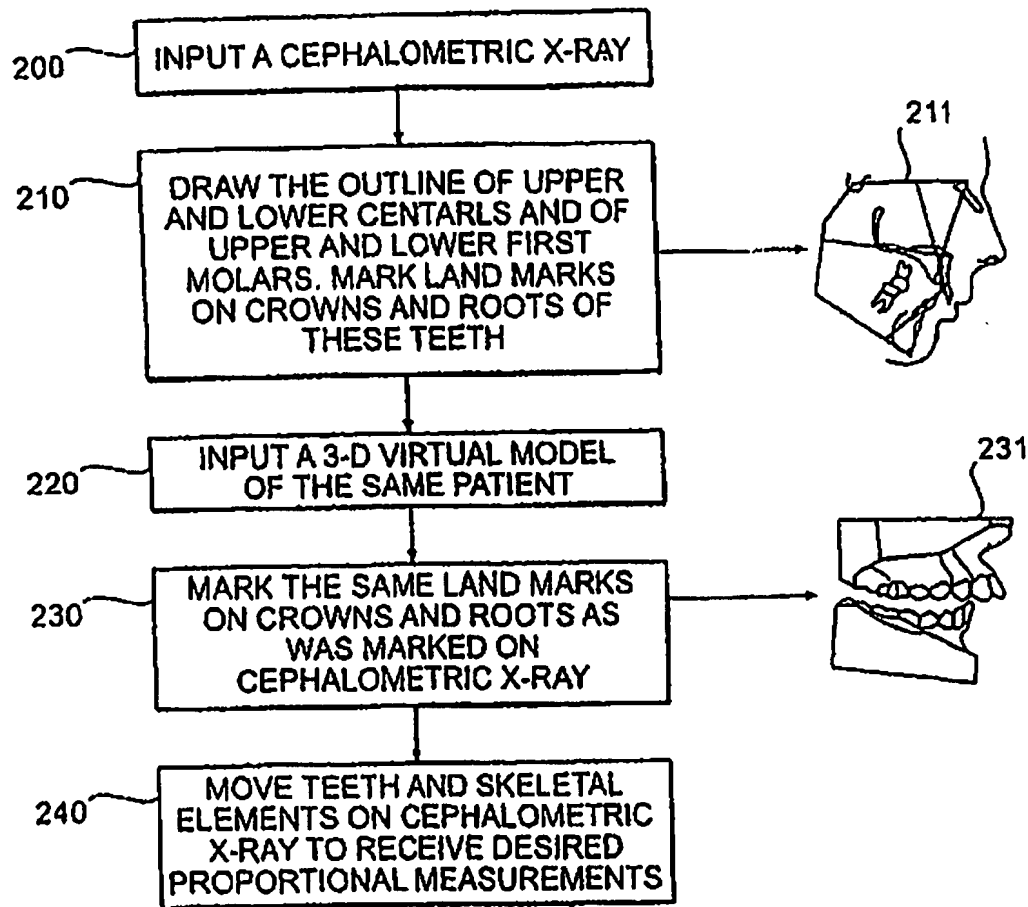


FIG. 6



**FIG. 7A****FIG. 7B**

**FIG. 8A**

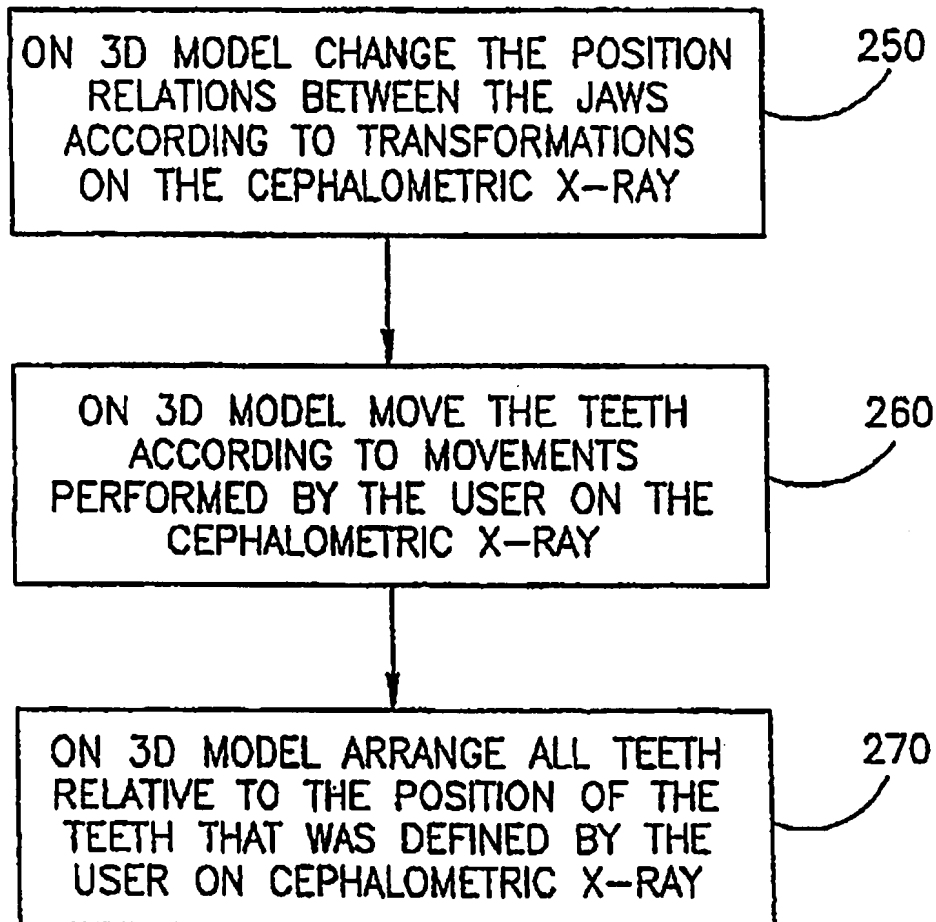


FIG. 8B